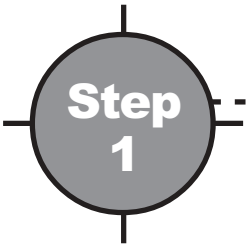
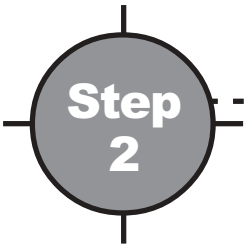
Air Quality

Printers emit air pollution and need to comply with IDEM air pollution permitting and control regulations. This chapter summarizes the regulations that apply to your shop. Here are the basic steps you should take to determine if you need a permit.



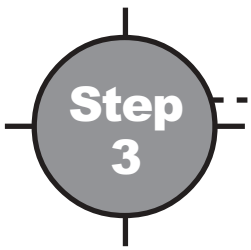
Calculate Your Emissions

- Review purchase records and compile an inventory of chemicals in your shop.
- Make sure you have the Material Safety Data Sheets (MSDSs) for those products.
- Calculate your emissions inventory.



Check IDEM Registration/Permit Requirements

- Using your emissions inventory, calculate your Potential to Emit (PTE).
  - between 5 and less than 25 tons VOC/yr - obtain a Registration.
  - between 25 and 100 tons VOC/yr - obtain a Minor Source Operating Permit (MSOP) or Source Specific Operating Agreement (SSOA).
  - more than 100 tons VOC/yr, but willing to accept production /emission limitations - obtain a Federally-Enforceable State Operating Permit (FESOP).
  - more than 100 tons VOC/yr, but cannot reduce emissions below threshold - obtain Part 70 Operating Permit (Title V Permit).
  - before installing, new equipment, check permit requirements on the new equipment.



Try P2 & Toxics Reduction

- No matter how big or small your shop, you can look for opportunities to reduce emissions.
  - Try more conservative application of products (e.g., squirt bottles instead of buckets).
  - Keep containers closed when not in use.
  - Purchase press cleaning solutions that can be diluted with water to reduce shop emissions and save on product purchases.

Note: some counties enforce their own air pollution control requirements. Some counties have delegation from IDEM to issue their own permits. If you are located in one of these counties, you need to contact your county agency to determine which, if any, permit and control requirements apply. See page 117 for county agency contacts. Because the regulations in these counties must be at least as strict as IDEM's, virtually all the information in this chapter applies. If there are any differences, the county regulations are more stringent and may have lower permit thresholds. You may need to send your permit application to both the local agency and IDEM. Not all local agencies issue all types of permits. Call IDEM's Office of Air Quality (OAQ) or CTAP for more information.

What Pollutants are Emitted From Print Shops?

Lithographic printers typically emit these air pollutants: VOCs, HAPs, PM, NOx, CO and SOx.

See the definitions below. Most VOCs and HAPs generally come from press cleaning solutions, fountain solution additives and printing inks. Particulate Matter (PM) is generally paper dust from the cutting, slitting, folding and binding operations. NOx, CO and SOx are generated from fuel burning equipment, such as boilers and press dryers.

Important Definitions

Actual Emissions means the actual amount of a pollutant emitted from each piece of equipment, such as a press.

Hazardous Air Pollutants (HAPs) are listed chemicals that are considered hazardous to the environment and public health.

Nitrogen Oxides (NOx), Carbon Monoxide (CO), Particulate Matter (PM), and Sulfur Oxides (SOx) are byproducts from the combustion of fuel oil, liquid propane gas (LPG), natural gas, etc. and contribute to smog.

Nonattainment Area is a geographical area that does not meet federal air quality standards. An attainment area meets those standards.

Potential To Emit (PTE) means the maximum capacity of a source to emit a pollutant under its physical and operational design and operating 8,760 hr/yr.

Emission, for printers evaporation is the most common emission. It can be through a stack or emitted into a room and then exhausted through general building ventilation to the outside.

Emission Unit is an individual piece of equipment that emits air pollution.

Volatile Organic Compounds (VOC) are chemicals, when emitted, that contribute to smog.

How Do I Get Started and Where Do I Go from Here?

To determine if any IDEM requirements apply, you must compile an inventory.

The inventory consists of the types and amounts of air pollution emissions from all sources including: inks, coatings, adhesives, press cleaning solutions, boilers and storage tanks. Film and plate chemistry must be counted depending on the quantities used. You do not have to include products for

incidental use, such as janitorial products and paints for maintenance; however, some general maintenance activities must be considered.

Start by listing the products (inks, coatings, adhesives, press cleaning solutions, fountain solution, etc.) you use in your shop. See Figure 1 for guidance. From purchase records, estimate the quantity of each product used in the past 12 months. If you intend to modify or install equipment, estimate product usage based on a similar shop operation or use a worse case scenario with projected utilization without emission controls. Use the VOC calculation worksheets on pages 10 and 11 to calculate your PTE from each emission unit (press/bindery/ coating line) and for the whole shop. Large printers can compare this worst case scenario with projected actual emissions and determine whether limiting emissions may allow you to get a FESOP (page 16) or SSOA (page 18). **For calculating VOCs in sheetfed, nonheatset offset lithographic inks, you can use a 95% retention factor for the ink oils that remain on the paper (only 5% of the VOCs is emitted). For heatset printing, the retention factor is only 20%.**

With this inventory, you can now compare your emissions data with the registration and permitting thresholds in this chapter. The thresholds vary based on: 1) your PTE; and 2) whether your shop is in a nonattainment area. (Currently, Lake and Porter counties are nonattainment areas for ozone.)

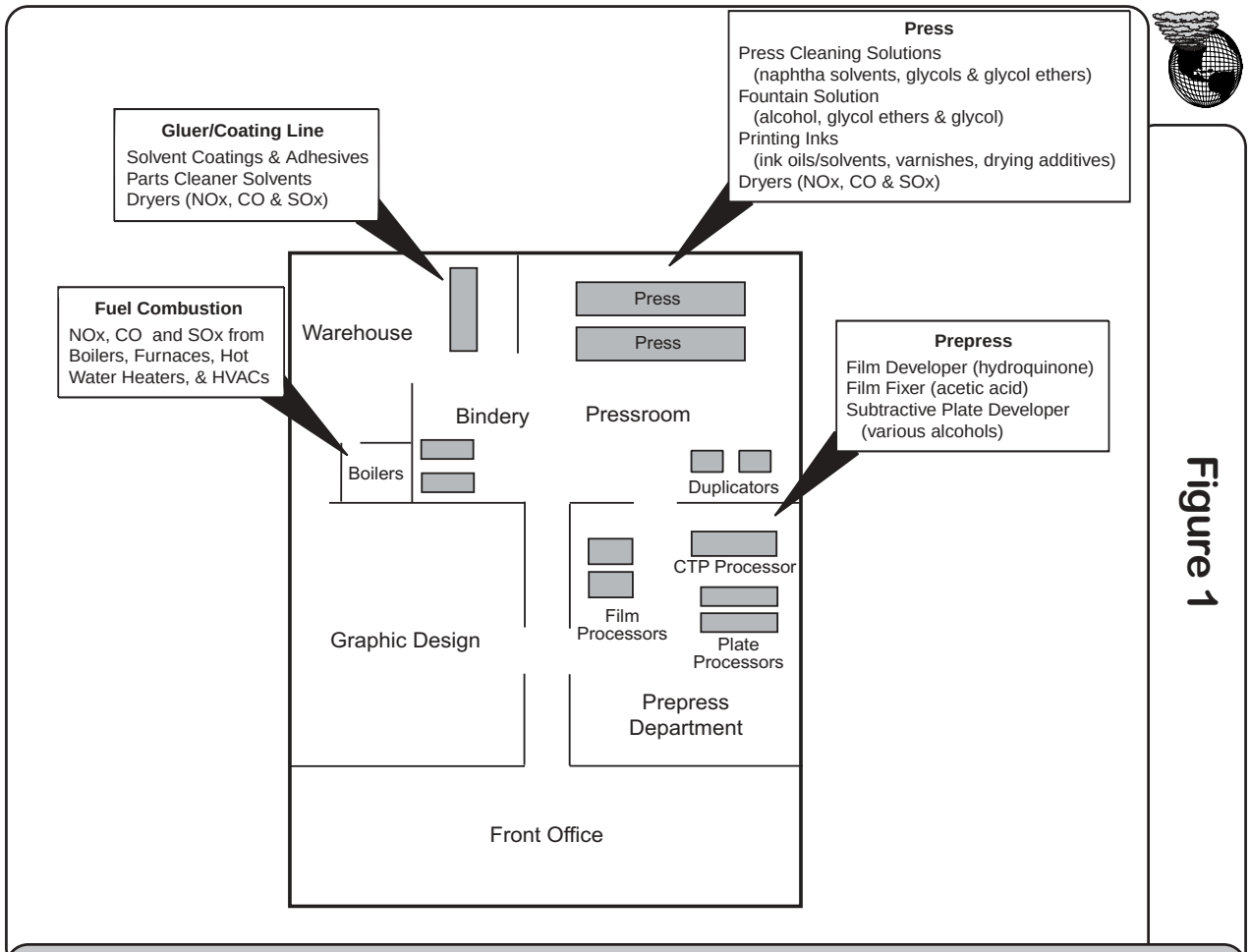


Figure 1

Typical Emission Sources in a Lithographic Print Shop

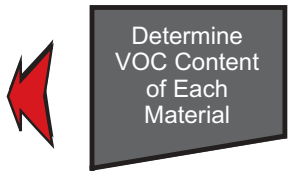
How Do I Determine my Potential VOC Emissions?

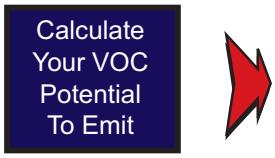
You are required to determine your PTE to see if you need to register or obtain a permit from IDEM.

There is a multistep process to make this determination. First, you must determine your VOC-containing material usage for the past 12 months. You then must estimate your Potential to Emit (PTE) based on operating your shop at maximum capacity.

The first thing you must do is determine your VOC-containing product usage. This can be done one of two ways. If you only buy materials (e.g., inks solvents, fountain solution, adhesives, coatings, etc.) for immediate use with little remaining inventory, then compile a list of products and their purchases for the past 12 months. If you maintain an inventory of materials, calculate usage by taking initial inventory, plus purchases, minus remaining inventory, again over 12 months. This is your material usage.

Next, determine the VOC Content of each material. Check the MSDS for each product. Look under the Physical Characteristics Section for "VOC Content" or "Percent VOCs". Do not use "% Volatility" because this may include water. The VOC Content should be in weight percent or lbs/gal. If not, then call your product supplier for this information.





IDEM registration and permit thresholds are based on Potential to Emit (PTE) from all VOC emission units in your shop. (Refer to definitions on page 7.) PTE represents emissions at maximum annual rated production capacity. You can calculate PTE from your inks, coatings, adhesives, press cleaning solutions, and fountain solution. Emissions from all of these VOC-containing products are calculated in pounds per million square inches. **(However, for the purpose of determining whether you must register your shop's emissions with IDEM, small lithographic printers can estimate PTE from alcohol, press cleaning and fountain solutions based on actual material usage. See Parts 1 and 2 on the VOC Emissions Worksheet. All other printers must calculate PTE from alcohol, press cleaning and fountain solutions in pounds per million square inches using the equations in Part 3.)**

Part 1: Calculate Your Press Cleaning and Fountain Solution Emissions

(for small printers using alcohol, press cleaning and fountain solutions)

Determine VOC-containing Material Usage for the Past 12 Months

1) Quantity of Blanket Wash during the past 12 months (include all similar products in the total). _____ gallons

2) Quantity of Alcohol during the past 12 months, if any used.
_____ gallons

3) Quantity of Fountain Solution during the past 12 months.
_____ gallons

Determine VOC Content of Each Material

4) VOC Content of Blanket Wash
_____ lbs VOC/gal of product

5) VOC Content of Fountain Solution
_____ lbs VOC/gal of product

Note: If the blanket wash is 90-100% VOC, just use the specific gravity multiplied by 8.34, giving you estimated lbs VOC/gal. If the MSDS does not have the VOC Content, call your supplier.

Calculate Your Actual VOC Emissions

6) ____ gals X _____ lbs/VOC/gal = _____ lbs VOC/yr

7) ____ gals Alcohol X 6.7 lbs VOC/gal = _____ lbs VOC/yr

8) ____ gals Fountain Solution X ____ lbs/VOC/gal =_____ lbs VOC/yr

9) Add lines 6 through 8 _____ **lbs VOC/yr**

10) **Your Actual VOC Emissions for the solutions are:**
_____ lbs VOC/yr ÷ 2000 = _____ **tons VOC/yr**

Part 2: Calculate Your Solvent Emissions

(for small printers using alcohol, press cleaning and fountain solutions)

Estimate Annual Production Hours and Operating Capacity

1) Hours of production (include makeready, pressruns & blanket washing) during the past 12 months. _____ hr

2) Percent of operating capacity _____ %
(Average capacity for all presses.)

Calculate blanket wash, alcohol and foutain solution PTE

3) Calculate your PTE for blanket wash, alcohol and fountain solution is:

$$\frac{\text{\_\_\_\_\_ tons VOC/yr X 8,760 hr/yr}}{\text{(\_\_\_\_\_ prod. hr X \_\_\_\_ \% capacity} \div 100)} = \text{\_\_\_\_\_ tons VOC/yr}$$

VOC Emissions Worksheet for Lithographic Printers

Part 3: Calculate Your Ink, Coating & Adhesive Emissions

(for midsize and large printers, also use for alcohol, press cleaning and fountain solutions)

Calculate Your Shop's PTE

1a) For each sheetfed press use the following equation to calculate millions of square inches per year ($MMin^2/yr$) throughput.

$$\frac{\text{Max Print Area (in}^2\text{/sheet) X Max Sheets/hr X 8,760 hr/yr}}{1{,}000{,}000} = MMin^2/yr$$

1b) For each web press and coating/adhesive line use the following equation to calculate millions of square inches per year ($MMin^2/yr$) throughput.

$$\frac{\text{Max Press Speed (ft/min) X 12 in/ft X Max Print Width (in) X 60 min/hr X 8,760 hr/yr}}{1{,}000{,}000} = MMin^2/yr$$

2) Determine separately the maximum coverage (lbs. of ink/coating/adhesive) per $MMin^2/yr$ for each press/line. This value is usually between 1-4 lbs ink for process color presses. For 1-3 unit presses, the value is usually between 0.3 and 1.0 lbs ink. The equipment supplier can help you determine it or you can calculate it from actual use.

3) Calculate VOC emissions from ink/coating/adhesive. Repeat for each VOC in ink/coating/adhesive.

_____ lbs. ink/$MMin^2/yr$ X Weight % VOC X 0.05
X Throughput ($MMin^2/yr$) ÷ 2,000 lbs/ton = _____ tons VOC/yr

Note: Use 0.8, instead of 0.05, for heatset lithographic operations.

4) Add all VOC emissions for inks/coatings/adhesives calculated in line 3.

____ tons/yr + ____ tons/yr + etc. = _____ total tons VOC/yr

Part 4: Calculate Your Shop's PTE

1) Take the results from line 3 of Part 2 on bottom (page 1 of this worksheet) and add it to line 4 of Part 3.

Calculate Your Shop's PTE

_____ tons VOC/yr (blanket wash, alcohol & fountain Solution)

_____ tons VOC/yr (inks, coatings & adhesives)

_____ tons VOC/yr PTE

VOC Emissions Worksheet for Lithographic Printers

DO I Have to Register my Shop with IDEM?

If your shop's emissions exceed 5 tons VOC/yr, you must apply for a Registration.

Take the PTE emissions you calculated on the VOC Emissions Worksheet (page 10), is it more than 5 tons VOC/yr? Remember, use your PTE **assuming no pollution control equipment**. If your PTE is more than 5 tons/yr, you must apply for a Registration. For many small printers below this threshold, the emissions are considered exempt from IDEM's registration and permitting requirements.

The registration process is fairly simple. Call IDEM's Office of Air Quality (OAQ) to obtain the proper forms and guidance or visit the permit guide on IDEM website at www.in.gov/idem/guides/permit. See page 113 for contacts. If you have more complex operations, you may need an experienced consultant to assist you in calculating your shop's VOC PTE and complete the application forms.

Important Tip

If, as a small printer, you are close to IDEM's registration threshold based on the VOC Emissions Worksheet, then you should recalculate your shop's PTE using the equations in Part 3 of the worksheet for alcohol, press cleaning and fountain solution. This will ensure that you have made the proper determination on whether you must register your print shop with IDEM.

What If I am Exempt From Registration?

IDEM still recommends that you do as much P2 in your shop as possible.

Not required to register with IDEM? You should still take the opportunity to look specifically at P2 techniques that apply to your operations. All printers can do P2. Some of these techniques can be implemented at little to no cost. The biggest challenge faced by a printer is employee awareness. Management commitment with employee awareness training will help you reduce VOC emissions, improve environmental quality and maintain a safe workplace. Look at the following P2 techniques to determine which ones you can use.

- **Look for ways to reduce blanket and roller wash usage.**
- **Keep containers of inks, solvents, fountain solutions and soiled shop towels closed.**
- **Use alcohol substitutes in the fountain solution.**
- **Use low VOC blanket and roller washes that have a vapor pressure of less than 10 mm Hg (mm mercury at 68°F).**

Use squirt bottles or plunger cans for blanket wash application.

Use blanket washes that can be diluted with 10%, 20% or 50% water for general press cleaning.

Avoid blanket washes, coatings and adhesives containing chlorinated solvents, such as methylene chloride and 1,1,1-trichloroethane. These solvents are regulated as HAPs (page 17).

Just Do P2!

P2 Examples

Example 1

A printer uses only three drums (165 gals) of blanket wash annually. Using the VOC Emissions Worksheet, the printer's PTE is approximately 4.0 tons VOC/yr. To keep VOC emissions low, here are some P2 techniques for this printer:

- Uses an alcohol-free fountain solution.
- Uses a press cleaning solution with low vapor pressure.
- Uses squirt bottles instead of buckets for solvent application.
- Mixes water with the press cleaning solution for light cleaning.
- Reuses dirty solvent for heavy duty parts cleaning followed by a clean rinse.

This printer eliminated alcohol and reduced blanket wash purchases. VOC emissions were reduced from the operations – an environmental improvement.

Example 2

This printer uses 20 drums (1,100 gals) of press cleaning solution and four drums of alcohol. The PTE is 11 tons VOC per year. Here are several P2 techniques this printer can implement to stay below IDEM's registration threshold:

- Use an alcohol-free fountain solution.
- Use squirt bottles instead of buckets for solvent application.
- Purchase a small solvent reclaimer to reuse solvent.
- Evaluate and use waterbased cleaning solutions for light duty cleaning.

The solvent reclaimer costs $3,000. The printer can reclaim blanket wash for reuse and only one drum of waste is generated per year. Four drums of alcohol are also eliminated. Total savings is $2,600 in reduced costs of alcohol and blanket wash.

Does my Shop Need an Operating Permit for VOC Emissions?

If your PTE exceeds 25 tons VOC /yr, then an operating permit is required.

If you are were exempt from a permit and plan to install equipment (e.g., a press or coating line) that increases your PTE above 25 tons VOC/yr, then you must apply for a construction and operating permit. There are several types of operating permits as listed below:

→ between 25 and 100 tons/yr - obtain a Minor Source Operating Permit (MSOP) or Source Specific Operating Agreement (SSOA).

→ more than 100 tons/yr, but willing to accept production or emission limitations - obtain a Federally-Enforceable State Operating Permit (FESOP).

→ more than 100 tons/yr, but cannot reduce emissions below this threshold - obtain Part 70 Operating Permit (Title V Permit).

After application, IDEM will issue a construction permit that allows you to install, but not operate equipment. Call OAQ for the permit application forms or download them from IDEM's website. See page 113 for website address.

In order to operate the new equipment, the construction permit must be converted to an operating permit. Once construction is complete, you complete an Affidavit of Construction (the form will be included with your construction permit). Send the Affidavit to the OAQ Permits Branch. If you construct exactly what you were approved for, then you can begin operation on the postmarked date of the affidavit that you sent to OAQ. If the as-constructed is different, then you must obtain a permit amendment before beginning operation. **Any operations or activities conducted outside of the permit conditions could result in IDEM enforcement actions, which may include penalties.**

Call OAQ for input and guidance. There is always a permit reviewer of the day available during business hours. OAQ staff can provide you with important information and permitting issues you must address in the application. You may call IDEM's CTAP for confidential assistance. See page 113 for contact.

Obtain assistance from a trade association, such as PII, or use a consultant experienced in printing.

Provide as much information as possible to substantiate your emission calculations. OAQ will review the application for completeness. If there is missing information, you will be notified and the permit process will be delayed.

Call OAQ to find out how the review process is progressing.

IDEM will issue a draft permit for public comment. After public comment, it becomes final and you can begin construction.

Retain copies of all correspondence with IDEM. To confirm receipt of documents, use registered mail/return receipt requested.

What If my Shop is Located in Nonattainment County?

Some counties have more stringent registration and permitting requirements.

If you are in Clark or Floyd County, two nonattainment counties, call IDEM's OAQ, CTAP or local air pollution control agencies (page 117) for more information. There are different rules for these counties because of their ozone nonattainment status.

Nonattainment Areas for Ozone as of 1/2000

I Have Pollution Control Equipment. How is this Handled?

The equipment does not need a permit, but you may need a permit for any emissions from the equipment.

Registration and permitting requirements are based on what your PTE would be **without** any control equipment (afterburners, dust collectors, etc. that exhaust to the outside). Pollution control equipment reduce emissions from an emission unit (press, coating line, bindery, etc.). After June 1994, control equipment registration was eliminated. However, there are specific equipment emissions, i.e., from afterburners, that may still require registration or a permit. Contact OAQ for guidance.

What About Other Pollutant Emissions from my Shop?

You probably have equipment that emit NOx, SOx CO or PM10 as well.

The primary sources of these pollutants include: emergency generators, water heaters and boilers. However, printing equipment (online/offline dryers, bindery lines, etc.) may also emit pollutants in addition to VOCs. See definitions of each pollutant on page 7.

Because there are so many different sources of these pollutants in a print shop, the registration and permitting requirements apply to total shop emissions (as PTE) by pollutant. If your emissions exceed the following thresholds, you must register or obtain a permit from IDEM.

Registration & Permit Thresholds

Air Pollutant	Registration	Construction/Operating Permit
NOx	10 tons/yr	25 tons/yr
SOx	10 tons/yr	25 tons/yr
CO	25 tons/yr	100 tons/yr
PM10	5 tons/yr	25 tons/yr

Stitcher/trimmer, high-speed press lines and bailers are sources of dust and other PM10. To manage airborne dust in a print shop, various ventilation and filtration techniques are used. The emissions from this equipment may be subject to registration or permitting based on PTE. General room ventilation equipment is exempt.

The following restrictions apply to boilers, space heaters, water heaters, ovens and dryers to

remain exempt from any permits. Equipment with annual fuel usage over these thresholds must be registered and may require an operating permit or Source Specific Operating Agreement (SSOA). There are also thresholds for oil-fueled equipment and dual-fuel equipment. If you have this equipment, then you should call OAQ for guidance and application forms. Be sure to have the following information: type of equipment; fuel type; and heat input capacity in Btu/hr (usually found on the equipment name plate).

Any unit with a maximum heat input capacity of less than 0.3 MMBtu/hour (300,000 Btu/hr) that use natural gas as fuel is exempt.

Any unit with a maximum heat input capacity between 0.3 MMBtu/hr and 10 MMBtu/hr (10,000,000 Btu/hr) and use natural gas as a fuel are restricted to annual fuel usage of 714,000,000 ft^3 of natural gas is exempt.

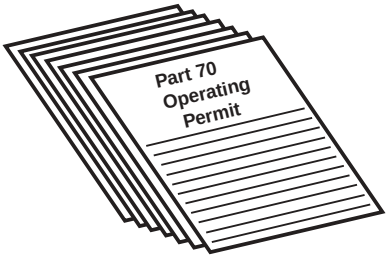
There are different IDEM thresholds for registering and permitting internal combustion sources like emergency generators. The thresholds are based on the type of source, fuel, and pollutant emissions (as PTE). You should contact OAQ for guidance.

What is a Part 70 Operating Permit?

Part 70 Operating Permits are for Major Sources of emissions.

Part 70 Operating Permits are also known as Title V Permits. Unlike the permits that were issued by IDEM before 1990, these permits are required under the federal Clean Air Act Amendments of 1990 and reserved for large or Major Sources.

These emission thresholds are based on PTE and apply to all Major Sources even if they have other IDEM Operating Permits. Only the largest printers would be subject to these permit requirements. A printer has the option of applying for a Federally Enforceable State Operating Permit (FESOP). This means the printer will have to agree to a combination of permit restrictions on material inputs, equipment, operating hours and pollution control equipment. See the thresholds table on the next page for Part 70 Operating Permits.



Part 70 Permit Thresholds

Air Pollutant	Permit Threshold	
	Statewide	Lake & Porter Counties
VOC	100 Tons/yr	25 Tons/yr
NOx	100 Tons/yr	25 Tons/yr
SOx	100 Tons/yr	100 Tons/yr
CO	100 Tons/yr	100 Tons/yr
PM10	100 Tons/yr	100 Tons/yr
HAPs	10 tons single HAP/yr or 25 tons total HAPs/yr	10 tons single HAP/yr or 25 tons total HAPs/yr

NOTE: IDEM's Title V Program also applies to Major Sources subject to the Prevention of Significant Deterioration (PSD) Program and New Source Review (NSR) Program for nonattainment areas (areas that do not meet federal air quality criteria, e.g., Lake and Porter Counties).

If a printer currently has an Operating Permit, but increases its PTE above Part 70 Permit thresholds, the printer must submit an application to OAQ before constructing and operating the new or modified equipment.

What About Hazardous Air Pollutants?

Hazardous Air Pollutants (HAPs) are chemicals that are considered hazardous to the environment.

HAPs are regulated by USEPA and IDEM. See page 102 for the complete list of HAPs. Most Printers do not use products that contain HAPs in significant quantities. If you are exempt from IDEM registration using the VOC Estimator Worksheet on page 10, you are also exempt from the HAP requirements. However, if you use HAP-containing products in significant quantities, you must determine whether you exceed the HAP thresholds in the above table and need a Part 70 permit.

HAPs Commonly Found in Lithographic Print Shops

CAS Number	Chemical
98828	Cumene
100414	Ethylbenzene
107211	Ethylene glycol
50000	Formaldehyde
110543	n-Hexane
7647010	Hydrochloric Acid
123319	Hydroquinone
71556	1,1,1-Trichloroethane
75092	Methylene chloride
127184	Tetrachloroethene
108883	Toluene
79005	1,1,2-Trichloroethane
79016	Trichloroethylene (TCE)
1330207	Xylene (mixture)
95476	o-Xylene
108383	m-Xylene
106423	p-Xylene
7440473	Chromium compounds
I-311	Certain glycol ethers
7439921	Lead compounds
7439965	Manganese compounds
7782492	Selenium compounds

There Is Also an SSOA for Graphic Arts Operations

Certain Printers may be able to get an SSOA.

Certain print shops may obtain an Source Specific Operating Agreement (SSOA) in place of an Part 70 Operating Permit. The SSOA is a means of limiting the PTE of operations that have a PTE above the pollutant thresholds for Part 70 Operating Permits, but have actual emissions of those pollutants at levels less than or equal to half the Part 70 thresholds. (See previous discussion of Part 70 Operating Permits on page 16.) By obtaining a SSOA, you are exempt from applying for and obtaining the Part 70 Operating Permit.

When applying for a SSOA, it must cover all of the existing and any known future proposed emission units and processes in your shop. A SSOA is specific to large surface coating and graphics arts operations. There are material use restrictions (particularly in Lake and Porter Counties) and certain recordkeeping requirements for printers who obtain a SSOA.

Interested printers should contact OAQ or CTAP for guidance on applicability and the permit process.

Other Air Quality Compliance Issues

Permit Requirements

You must comply with the conditions of your operating permit.

When you receive a construction or operating permit, you must comply with all of its provisions. Most permits require monthly recordkeeping on material usage or pollutant emissions. Larger printers may also have to monitor and record operating parameters of pollution control equipment or perform stack testing. To ensure compliance with your permit, you should make any monitoring, testing and recordkeeping a regular part of your operations.

Do I Have to Report my Emissions Each Year?

You may be required to submit an Annual Facility Emissions Statement.

Larger print shops may be required to submit an annual Facility Emissions Statement to IDEM. If your shop is located in Clark, Elkhart, Floyd, Lake, Marion, Porter, St. Joseph or Vanderburgh Counties

and your PTE for VOC, and NOx are equal to or greater than 10 tons/yr, then you must report by April 15th annually. Elsewhere in the state, the threshold is 100 tons/yr for all pollutants, VOC, NOx, SOx, CO and PM. The due date is July 1st each year. The forms and guidance materials are provided by OAQ.

What about the MACT Standards?

The MACT standards do not apply to lithographers.

The Maximum Achievable Control Technology (MACT) standards only apply to wide-web flexographic, publication rotogravure and packaging rotogravure operations that use HAPs in excess of the Part 70 Permit thresholds. See previous discussion on HAPs. For guidance, call OAQ or CTAP.

Do I Need a Risk Management Plan?

A Risk Management Plan (RMP) allows printers to help the government coordinate responses in a chemical emergency.

The Clean Air Act of 1990 required EPA to focus on the prevention of chemical accidents. Companies that produce, handle, process, distribute or store certain chemicals above specified thresholds must identify the hazards and assess the risks of potential chemical accidents, known as Risk Management Planning. Risk Management Planning integrates local government emergency preparedness and response, pollution prevention, and worker safety by anticipating and developing preventive measures for potential chemical accidents – small or large.

Risk Management Planning is required for printers that use a threshold quantity of a listed substance in a single process. Currently, there are over 100 listed substances with established threshold quantities of 500 to 20,000 lbs. For flammables, the threshold quantity is 10,000 lbs.

If you store in bulk quantities and use flammable substances, you need to determine if the material is listed. If so, you must determine if you exceed the 10,000 lbs threshold. You only quantify the flammable substance itself and not the whole mixture, unless it is 100%.

For printers, bulk storage of flammable (flash point less than 100°F) solvents could trigger the RMP requirements. If you store more than 1,500 gallons of a typical flammable petroleum solvent (density of 6.7 lbs/gal), you would exceed the 10,000 lbs threshold quantity. Generally, offset lithographic inks do not contain listed substances and gasoline for motor vehicles is exempt.

If you exceed any of the thresholds, you are required to develop a RMP that must be submitted to USEPA. Printers that require assistance should contact the Federal Small Business Assistance Program, the Emergency Planning and Community Right-to-Know Hotline, or IDEM. See page 113 for contact information.